

WHAT IS CLAIMED IS:

1. An array substrate for a liquid crystal display device, comprising:

a substrate;

a thin film transistor having a signal line of dual layered structure of a copper compound and copper, and

a pixel electrode connected to the thin film transistor.
2. The array substrate according to claim 1, wherein the copper compound includes nitrogen.
3. The array substrate according to claim 1, wherein the copper compound is formed by a reaction between a reactive gas and copper.
4. The array substrate according to claim 3, wherein the reactive gas is one of NH_3 and N_2 .
5. The array substrate according to claim 1, wherein the signal line is one of a gate line and a data line.
6. The array substrate according to claim 1, wherein the thin film transistor further comprises a gate electrode with a dual layer structure of a copper compound and copper.

7. The array substrate of claim 1, wherein the thin film transistor further comprises a drain electrode with a dual layer structure of a copper compound and copper.
8. The array substrate of claim 1, wherein the thin film transistor further comprises a source electrode with a dual layer structure of a copper compound and copper.
9. A manufacturing method of an array substrate for a liquid crystal display device, comprising:
 - forming a copper compound layer on a substrate;
 - forming a copper layer on the copper compound layer;
 - forming a signal line by etching the copper compound layer and the copper layer;
 - forming a thin film transistor having the signal line; and
 - forming a pixel electrode connected to the thin film transistor.
10. The method according to claim 9, wherein the copper compound layer is formed in a processing chamber where a gas flows that chemically combines with the copper.
11. The method according to claim 10, wherein the gas is one of NH_3 and N_2 .
12. The method according to claim 9, wherein the signal line includes a gate line and a data line.

13. The method according to claim 9, wherein the copper layer is formed in a processing chamber where a gas flows that does not chemically combine with the copper.

14. The method according to claim 13, wherein the gas is Ar.

15. The method of claim 9 further comprising forming a gate electrode by etching the copper compound layer and the copper layer.

16. The method according to claim 9, wherein forming the thin film transistor includes:

forming an active layer;

forming an ohmic contact layer;

forming a copper compound layer on the ohmic contact layer;

forming a copper layer on the copper compound layer on the ohmic contact layer; and

forming a drain electrode and a source electrode by etching the copper compound layer and the copper layer on the ohmic contact layer.

17. An array substrate for a liquid crystal display device, comprising:

a substrate;

a gate line having a dual layered structure of a copper compound and copper;

a source line having a dual layered structure of a copper compound and copper;

a thin film transistor further comprising:

an active layer;
an ohmic contact layer;
a gate electrode having a dual layered structure of a copper compound and copper;
a source electrode having a dual layered structure of a copper compound and copper; and
a drain electrode having a dual layered structure of a copper compound and copper;
a passivation layer; and
a pixel electrode connected to the drain electrode.

18. The array substrate according to claim 17, further comprising an electrode having a dual layered structure of a copper compound and copper formed over the gate line connected to the pixel electrode.

19. The array substrate according to claim 17, wherein the copper compound includes nitrogen.

20. The array substrate according to claim 19, wherein the copper compound is formed by a reaction between a reactive gas and copper.

21. The array substrate according to claim 20, wherein the reactive gas is one of NH_3 and N_2 .